# Vivekananda Roy

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## Education

PhD in Statistics, 2008, University of Florida (Thesis Advisor: Prof. James P. Hobert)
Dissertation Title: Theoretical and methodological developments for Markov chain Monte Carlo algorithms for Bayesian regression

MS in Statistics, 2003, Indian Statistical Institute, Calcutta, India
Specialization: Mathematical Statistics and Probability

BS in Statistics (Honors), 2001, R. K. Mission Residential College, Narendrapur
University of Calcutta, Calcutta, India.
Minor: Mathematics and Economics

## Positions

Iowa State University, Department of Statistics
Professor, since 2024
Associate Professor, 2015–2024
Assistant Professor, 2008–2015

Indian Statistical Institute, Kolkata, India
Visiting Scientist, Spring (partly), 2015, Summer, 2016, 2017

Université Paris-Dauphine, Paris, France
Visiting Scholar, Summer 2008

## Research Interests

Convergence rates of Markov chain Monte Carlo algorithms; importance sampling; model selection; Bayes and empirical Bayes methods; high-dimensional data analysis; spatial statistics

## Associate Editorship

*Electronic Journal of Statistics*, since 2022
*Journal of Computational and Graphical Statistics*, since 2021
*Sankhyā, series B*, since 2016

## Refereed Journal Articles

### Theory and Methods

Roy, V. and Evangelou, E. (2024) Selection of proposal distributions for multiple importance sampling, *Statistica Sinica*, **34**: 27-46

Roy, V. and Zhang, L. [1] (2023) Convergence of position-dependent MALA with application to conditional simulation in GLMMs, *Journal of Computational and Graphical Statistics*, **32**: 501-512

Li, D. [1] Dutta, S. and Roy, V. (2023) Model based screening embedded Bayesian variable selection for ultra-high dimensional settings, *Journal of Computational and Graphical Statistics*, **32**: 61-73

Dixit, A. [1] and Roy, V. (2022) Analyzing relevance vector machines using a single parameter approach, *Statistical Analysis and Data Mining*, **15**: 143-155

Rao, Y. [1] and Roy, V. (2021) Block Gibbs samplers for Bayesian logistic mixed models: convergence properties and a comparison with full Gibbs samplers, *Electronic Journal of Statistics*, **15**: 5598-5625

Dixit, A. [1] and Roy, V. (2021) Posterior impropriety of some sparse Bayesian learning models, *Statistics and Probability Letters*, **171**: 109039

Wang, R. [1], Dutta, S. and Roy V. (2021) A note on marginal correlation based screening, *Statistical Analysis and Data Mining*, **14**: 88-92

Roy V. (2020) Convergence diagnostics for Markov chain Monte Carlo, *Annual Review of Statistics and Its Application*, **7**: 387-412

Evangelou, E. and Roy, V. (2019) Estimation and prediction for spatial generalized linear mixed models with parametric links via reparameterized importance sampling, *Spatial Statistics,* **29**: 289-315

Wang, X. [1], Roy, V. (2018) Convergence analysis of the block Gibbs sampler for Bayesian probit linear mixed models with improper priors, *Electronic Journal of Statistics*, **12**: 4412-4439

Wang, X. [1], Roy, V. (2018) Geometric ergodicity of Pólya-Gamma Gibbs sampler for Bayesian logistic regression with a flat prior, *Electronic Journal of Statistics*, **12**: 3295-3311

Wang, X. [1], Roy, V. and Zhu, Z. (2018) A new algorithm to estimate monotone nonparametric link functions and a comparison with parametric approach, *Statistics and Computing*, **28**: 1083-1094

Wang, X. [1], Roy, V. (2018) Analysis of the Pólya-Gamma block Gibbs sampler for Bayesian logistic linear mixed models, *Statistics and Probability Letters*, **137**: 251-256

[1]The author is a graduate student and the article is part of his/her doctoral dissertation.

Roy, V. , Tan, A. and Flegal, J. (2018) Estimating standard errors for importance sampling estimators with multiple Markov chains, *Statistica Sinica,* **28**: 1079-1101

Roy, V. and Chakraborty, S. (2017) Selection of tuning parameters, solution paths and standard errors for Bayesian lassos, *Bayesian Analysis,* **12**: 753-778

Dixit, A. [1] and Roy, V. (2017) MCMC diagnostics for higher dimensions using Kullback Leibler divergence, *Journal of Statistical Computation and Simulation,* **87**: 2622-2638

Laha, A., Dutta, S. and Roy V. (2017) A novel sandwich algorithm for empirical Bayes analysis of rank data, *Statistics and its Interface,* **10**: 543-556

Simpson, M. [1], Niemi, J. and Roy, V. (2017) Interweaving Markov chain Monte Carlo strategies for efficient estimation of dynamic linear models, *Journal of Computational and Graphical Statistics,* **26**: 152–159

Athreya, K. B. and Roy, V. (2016) General Glivenko-Cantelli theorems, *Stat,* **5**: 306–311

Roy, V. (2016) Improving efficiency of data augmentation algorithms using Peskun's theorem, *Computational Statistics*, **31**: 709–728

Roy, V., Evangelou, E. and Zhou Z. (2016) Efficient estimation and prediction for the Bayesian binary spatial model with flexible link functions, *Biometrics*, **72**: 289–298

Athreya, K. B. Normand, R. Roy, V. and Wu, S. -J. (2015) Limit theorems for the estimation of $L^1$ integrals using the Brownian motion, *Statistics and Probability Letters*, **100**: 42–47

Athreya, K. B. and Roy, V. (2015) Estimation of integrals with respect to infinite measures using regenerative sequences, *Journal of Applied Probability*, **52 (4)** : 1133-1145

Athreya, K. B. and Roy, V. (2014) Monte Carlo methods for improper target distributions, *Electronic Journal of Statistics*, **8**: 2664–2692

Roy, V. (2014) Efficient estimation of the link function parameter in a robust Bayesian binary regression model, *Computational Statistics and Data Analysis*, **73**: 87–102

Athreya, K. B. and Roy, V. (2014) When is a Markov chain regenerative?, *Statistics and Probability Letters*, **84**: 22–26

Roy, V. and Dey, D. (2014) Propriety of posterior distributions arising in categorical and survival models under generalized extreme value distribution, *Statistica Sinica*, **24**: 699-722

Roy, V. and Kaiser, M. S. (2013) Posterior propriety for Bayesian binomial regression models with a parametric family of link functions, *Statistical Methodology*, **13**: 25–41

Roy, V. (2012) Convergence rates for MCMC algorithms for a robust Bayesian binary regression model, *Electronic Journal of Statistics*, **6**: 2463–2485

Roy, V. (2012) Spectral analytic comparisons for Data Augmentation, *Statistics and Probability Letters*, **82**: 103–108

Hobert, J. P. , Roy, V. and Robert C. P. (2011) Improving the Convergence Properties of the Data Augmentation Algorithm with an Application to Bayesian Mixture Modeling, *Statistical Science*, **26**: 332–351

Roy, V. and Hobert, J. P. (2010) On Monte Carlo methods for Bayesian multivariate regression models with heavy-tailed errors, *Journal of Multivariate Analysis*, **101**: 1190–1202

Roy, V. and Hobert, J. P. (2007) Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression, *Journal of the Royal Statistical Society*, Series B, **69**: 607–623

## Applications

Zheng, Z. Guo, B. Dutta, S. Roy, V. Liu, H. and Schnable, P. S. (2023) The 2020 derecho revealed limited overlap between maize genes associated with root lodging and root system architecture, *Plant Physiology*, to appear

## Invited Peer-Reviewed Book Chapters

Roy, V., Khare, K. and Hobert, J. P. (2024) The Data Augmentation Algorithm, *Handbook of Markov chain Monte Carlo*, 2nd Edition, Steve Brooks, Andrew Gelman, Galin L. Jones and Xiao-Li Meng eds., Chapman & Hall/CRC.

Roy, V. (2022) MCMC for GLMMs, *Handbook of Statistics Volume 47: Advancements in Bayesian Methods and Implementation*, C.R. Rao, Arni S.R.S. Rao and Alastair Young, eds., Elsevier, 135–159

Roy, D. [1] Roy, V., and Dey D. K. (2015) Analysis of bivariate survival data based on copulas with log generalized extreme value marginals *Extreme Value Modeling and Risk Analysis: Methods and Applications* D. K. Dey and J. Yan, eds. Chapman & Hall/CRC Press, 475–492

Roy, V., Evangelou, E. and Zhou Z. (2015) Empirical Bayes methods for the transformed Gaussian random field model with additive measurement errors, *Current Trends in Bayesian Methodology with Applications*, S. K. Upadhyay, U. Singh, D. K. Dey and A. Loganathan, eds. Chapman & Hall/CRC Press, 521–536

## Invited Book Reviews

Roy, V. (2012) Handbook of Markov chain Monte Carlo edited by S. P. Brooks, A. Gelman, G. L. Jones and X.-L. Meng, *Journal of the American Statistical Association*, **107**: 434–435

## Software

**bravo** R package for performing Bayesian screening and variable selection in high dimensional regression models. This is joint work with Somak Dutta and Dongjin Li.

**geoBayes** R package for Bayes and empirical Bayes analysis of geostatistical data. This is joint work with E. Evangelou.

## Unpublished Manuscripts

Roy, D. [1], Roy, V. and Dey D. K. (2014) Bayesian analysis of survival data under generalized extreme value distribution with application in cure rate model, Technical Report 49, Department of Statistics, University of Connecticut

## Other papers on arXiv

Rao, Y. [1] and Roy, V. (2023) Necessary and sufficient conditions for posterior propriety for generalized linear mixed models, *https://arxiv.org/abs/2302.00665*

Brofos, J. Roy, V. and Lederman, R. (2023) Geometric ergodicity in modified variations of Riemannian manifold and Lagrangian Monte Carlo, *https://arxiv.org/abs/2301.01409*

Wang, R. [1] Dutta, S. and Roy, V. (2022) Scalable Bayesian iterative screening in ultra-high dimensional settings, *http://arxiv.org/abs/2107.10175*,

## Research Funding

Co-PI, NIFA AG2PI Collaborative: Improving Causal Gene Detection across Crop and Livestock Species, USDA, 2023-2026, $1,132,877 (total costs), (PI Patrick S. Schnable; amount to Dutta and Roy in Statistics Department is roughly 80% of total costs), USDA-NIFA 2023-70412-41087

Co-PI "Hierarchical Statistical Models for the Analysis of On-Farm Agricultural Trials on Fungicide Use in Soybeans", Iowa Soybean Association, 2014-2015, $24,683 (total costs), (PI Mark S. Kaiser; amount to Roy is 20% of total costs)

## Invited Presentations

"On the geometric rate of convergence of some manifold MCMC chains"[2], Joint Statistical Meetings (ASA[3], IMS, ENAR, WNAR, SSC), Toronto, Canada, August, 2023

[2] I was invited to give this talk in a topic contributed session in the conference.

[3] ASA=American Statistical Association, IMS=Institute of Mathematical Statistics, ENAR=Eastern North American Region (of the International Biometric Society), WNAR=Western North American Region (of the International Biometric Society), and SSC=Statistical Society of Canada

"Geometric ergodicity of some manifold MCMC algorithms", ISBA-EAC[4] Conference, Qingdao, China, June, 2023

"Some variations of Riemannian manifold HMC, MALA, and Lagrangian Monte Carlo"[5], 2023 IRSA Conference- The Fast and the Curious: Modern Markov Chain Monte Carlo, Minneapolis, May, 2023

"On some variations of Riemannian manifold HMC and Lagrangian Monte Carlo"[5] CMStatistics 2022[6], London, UK, December, 2022

"Bayesian iterative screening"[5] ISBA-EAC Conference, Feng Chia University, Taiwan, July, 2022 (It was presented in the session of 'Selected Bayesian Research from Editorial Board Members of Sankhya'.)

"Bayesian iterative screening for ultra-high dimensional regressions" Indian Statistical Institute, Kolkata, India, July, 2022

"Monte Carlo methods in statistical mechanics" Keynote talk in the conference 'International Seminar on Tools in Sciences', A. P. Mahavidyalaya, West Bengal, India, June, 2022

"Convergence of manifold MALA with application to GLMMs" Data science colloquium, Worcester Polytechnic Institute, April, 2022

"Position-dependent MALA for conditional simulation in GLMMs"[5] CMStatistics 2021[7], London, UK, December, 2021

"Convergence diagnostics for MCMC"[5] Measuring the quality of MCMC output workshop of BayesComp-ISBA, online at https://bayescomp-isba.github.io/measuringquality.html, October, 2021

"MCMC algorithms for Bayesian generalized linear mixed models"[5] IISA[8] Conference on Statistics in the Era of Evidence Based Inference, University of Illinois Chicago, May, 2021

"Model based screening embedded Bayesian variable selection" University of Iowa, April, 2021

"On the theory and practice of Markov chain Monte Carlo methods"[5] Young Statisticians' Meet : Data Science in action, Indian Statistical Institute, Kolkata, India, March, 2021

"Model based screening embedded Bayesian variable selection" Birkbeck, University of London, UK November, 2020

"Posterior impropriety of relevance vector machines and a single penalty approach"[2], Bayes Comp 2020

[4]ISBA = International Society for Bayesian Analysis, EAC= Eastern Asia Chapter

[5]This presentation was made in an invited session in the conference.

[6]CMStatistics 2022 = The 15th International Conference of the ERCIM WG on Computational and Methodological Statistics

[7]CMStatistics 2021 = The 14th International Conference of the ERCIM WG on Computational and Methodological Statistics

[8]IISA= International Indian Statistical Association

Conference, Gainesville, Florida, January, 2020

"Estimation and prediction for spatial generalized linear mixed models" [5] EAC-ISBA[9] Conference, Kobe, Japan, July, 2019

"Selection of proposal distributions for multiple importance sampling" Indian Statistical Institute, Kolkata, India, May, 2019

"Selection of proposal distributions for multiple importance sampling" Miami University, Ohio, April, 2019

"Selection of proposal distributions for multiple importance sampling"[2] Joint Statistical Meetings, Vancouver, Canada, August, 2018

"MCMC algorithms for empirical Bayes analysis of rank data"[5] SII[10] invited session, ICSA[11] 2018 Applied Statistics Symposium, New Brunswick, June, 2018

"Selection of proposal distributions for generalized importance sampling estimators"[5] IISA Conference on Statistics and Data Science for better Life, Society and Science, Hyderabad, India, December, 2017

"Effective importance sampling for Bayesian model selection"[5] IASSL[12] Conference on Statistics for Good Governance, Colombo, Sri Lanka, December, 2017

"Convergence analysis of block Gibbs samplers for Bayesian probit linear mixed models" Indian Statistical Institute, Kolkata, India, June, 2017

"Generalized importance sampling methods for estimating large number of Bayes factors"[5] IISA International Conference on Statistics, Statistical and Data Sciences: A Key to Healthy People, Planet and Prosperity, Oregon , August, 2016

"Efficient Importance Sampling Methods for Estimating Parameters in SGLMMs and Improving Prediction"[2] Joint Statistical Meetings, Chicago, Illinois, July, 2016

"Generalized importance sampling estimators with applications in Bayesian model selection" Indian Statistical Institute, Kolkata, India, July, 2016

"Standard errors for importance sampling estimators with multiple Markov chains" Indian Institute of Technology Bombay, India, July, 2016

"Standard errors for importance sampling estimators with multiple Markov chains" Indian Institute of Science Education and Research, Pune, India, July, 2016

[9] EAC= Eastern Asia Chapter
[10] Statistics and its Interface
[11] ICSA= International Chinese Statistical Association
[12] IASSL= Institute of Applied Statistics, Sri Lanka

"Standard errors for importance sampling estimators with multiple Markov chains"[5] International conference on recent advances in statistics, University of Mumbai, India, June, 2016

"Estimating standard errors for importance sampling estimators with multiple Markov chains" Department of Statistics and Probability, Michigan State University, East Lansing, March, 2016

"Estimating standard errors for importance sampling estimators with multiple Markov chains" Department of Statistics, University of Connecticut, Storrs, September, 2015

"Estimating standard errors for importance sampling estimators with multiple Markov chains"[2] Joint Statistical Meetings (ASA, IMS, ENAR, WNAR, SSC), Seattle, Washington, August, 2015

"Spectral Analytic Comparisons for Data Augmentation with applications in Bayesian mixture models" Indian Statistical Institute, Kolkata, India, February, 2015

"Statistical estimation of integrals with respect to infinite measures" Indian Statistical Institute, Kolkata, India, February, 2015

"Spectral Analytic Comparisons for Data Augmentation" Indian Statistical Institute, Chennai, India, February, 2015

"Statistical estimation of integrals with respect to infinite measures" Chennai Mathematical Institute, India, February, 2015

"Efficient estimation and prediction for Bayesian spatial generalized linear mixed models"[5] IASSL Conference on Statistics and Society in the New Information Age: Challenges and Opportunities, Colombo, Sri Lanka, December, 2014

"Efficient estimation and prediction for robust Bayesian spatial generalized linear mixed models"[5] IISA Conference On Research Innovations in Statistics for Health, Education, Technology, and Society, Riverside, July, 2014

"Efficient estimation and prediction for robust Bayesian spatial generalized linear mixed models"[5] ISBIS[13] 2014 and SLDM Meeting on Data Mining in Business and Industry, Durham, NC, June, 2014

"Monte Carlo methods for improper target distributions" Department of Statistics, Purdue University, Indiana, October, 2013

"Monte Carlo methods for improper target distributions" Summer at Census Scholar seminar, U. S. Census Bureau, Washington, DC, August, 2013

[13]ISBIS= International Society for Business and Industrial Statistics, SLDM = Section on Statistical Learning and Data Mining of the American Statistical Association

"Monte Carlo methods for improper target distributions" Department of Statistics, University of Missouri, Columbia, March, 2013

"Monte Carlo methods for improper target distributions"[5] ISBA Regional Meeting and International Workshop/Conference on Bayesian Theory and Applications, Banaras Hindu University, India, January, 2013

"Monte Carlo methods for improper target distributions"[5] Young Statisticians Meet- An International Conference, Burdwan University, India, December, 2012

"Monte Carlo methods for improper target distributions" Department of Biostatistics, University of California, Los Angeles, October, 2012

"Monte Carlo methods for improper target distributions" Department of Statistics, University of California, Riverside, October, 2012

"Spectral Analytic Comparisons for Data Augmentation" Department of Statistics, Fox School of Business, Temple University, April, 2012

"Spectral Analytic Comparisons for Data Augmentation" Division of Statistics, Northern Illinois University, November, 2011

"Categorical and Survival Modeling using Generalized Extreme value Distribution" Department of Statistics and Actuarial Science, University of Iowa, April, 2011

"Spectral Analytic Comparisons for Data Augmentation"[5] IISA Conference on Probability, Statistics and Data Analysis, Raleigh, North Carolina, April, 2011

"Improving the Data Augmentation Algorithm with an Application to Bayesian Mixture Modeling" Department of Statistics, University of Nebraska, March, 2011

"Improving the Data Augmentation Algorithm with an Application to Bayesian Mixture Modeling" School of Statistics, University of Minnesota, September, 2010

"Convergence rates for MCMC algorithms for Bayesian multivariate Student's $t$ regression"[5] 1st IIMA International Conference on Advanced Data Analysis, Business Analytics and Intelligence, Indian Institute of Management, Ahmedabad, India, June, 2009

"Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression" Centre de Recherche en Mathématiques de la Décision, Université Paris-Dauphine, Paris, France, June, 2008

"Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression"

Department of Statistics, Indiana University, February, 2008

"Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression" Department of Mathematics, Clark University, February, 2008

"Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression" Department of Mathematical Sciences, Clemson University, February, 2008

"Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression" Department of Statistics, Colorado State University, February, 2008

"Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression" Department of Mathematics, University of Arizona, January, 2008

"Convergence rates and asymptotic standard errors for MCMC algorithms for Bayesian probit regression" Department of Statistics, Iowa State University, January, 2008

"Random Walks on finite Abelian groups", UF Chapter of SIAM, Department of Mathematics, University of Florida, February, 2007

## Short course

"Monte Carlo methods with applications" Chennai Mathematical Institute, India, June 10, 2019

## Professional Activity

### Review work

### Refereeing for journals

*ACM Transactions on Modeling and Computer Simulation, Advances in Applied Probability, Annals of Applied Probability, Annals of Applied Statistics, Bayesian Analysis, Bernoulli, Biometrics, Biometrika, Computational Statistics, Computational Statistics and Data Analysis, Communications in Statistics– Theory and Methods, Electronic Journal of Probability, Electronic Journal of Statistics, Environmental and Ecological Statistics, Journal of Applied Probability, Journal of the American Statistical Association, Journal of Computational and Graphical Statistics, Journal of the Royal Statistical Society, Series B, Journal of Statistical Computation and Simulation, Journal of Statistical Planning and Inference, Methodology and Computing in Applied Probability, Sankhyā, Scandinavian Journal of Statistics, Statistics & Computing, Statistics in Medicine, Statistical Methodology, Statistical Science, Statistics & Probability Letters, Statistica Sinica, Stats, The Canadian Journal of Statistics , The Journal of Quantitative Economics , WIRES Computational Statistics*

**Refereeing for books/conferences**

*Current Trends in Bayesian Methodology with Applications, S. K. Upadhyay, U. Singh, D. K. Dey and A. Loganathan, eds. Chapman & Hall/CRC Press, Extreme Value Modeling and Risk Analysis: Methods and Applications D. K. Dey and J. Yan, eds. Chapman & Hall/CRC Press, International Conference on Frontiers of Infrastructure Finance, Indian Institute of Technology, Kharagpur, India, 2011, International Conference on Infrastructure Finance, Indian Institute of Technology, Kharagpur, India, 2010*

External review: PhD dissertation, University of Sydney, Australia, 2015

**Other Professional Service and Experience**

Member, Committee on Nominations, Institute of Mathematical Statistics, 2014-2015

Summer at Census Research Scholar, U. S. Census Bureau, August, 2013

## Teaching

| *Course No. (Credit hrs)* | *Title* | *Students* | *Semester* |
|---|---|---|---|
| Stat 644 (3) | Advanced Bayesian Theory | PhD stat major | F22, F20, F18, F16, F14** |
| Stat 642 (3) | Advanced Probability Theory | PhD stat major | S22, S20, S18, S17, S16 |
| Stat 543 (3) | Theory of Probability and Statistics II | MS stat major | S24, S23, S19, S14, S12, S10 |
| Stat 588/447 (4) | Statistical Theory for Research Workers | graduate, non-stat major | F22, S18, F15, F14, S13, F11, S11, F10 |
| Stat 342 (4) | Introduction to the Theory of Probability and Statistics II | undergraduate, stat major | S20, S19, F17 |
| Stat 341 (4) | Introduction to the Theory of Probability and Statistics I | undergraduate, stat major | S21, F20, F19, F15, S14, F13, S13 |
| Stat 322 (3) | Probabilistic Methods for Electrical Engineers | undergraduate | S24, F23, S22, F21 |
| Stat 101 (4) | Principles of Statistics | undergraduate service level | F10*, F09*, S09* |

** Developed this *new* course (offered as experimental Stat 644x) to provide students with a solid foundation of the theory underlying Bayesian inference as well as computations using Markov chain Monte Carlo methods.

*two sections, F=Fall, S= Spring

## Advising

### PhD Students

An Nguyen, current, expected graduation: summer 2025

Lijin Zhang, Dissertation title: Convergence analysis of manifold MALA with application to generalized linear mixed models, graduated fall 2023, Current position: Data Analyst, Datalysys

Run Wang (with S. Dutta), Dissertation title: Variable screening in ultra-high dimensional linear regressions, graduated spring 2022, Current position: Data Analyst, Google, California

Dongjin Li (with S. Dutta), Dissertation title: Bayesian Variable Selection in Ultra-high Dimensional Settings, graduated summer 2021, Current position: Quantitative Analytics Specialist, Wells Fargo, Charlotte, North Carolina

Yalin Rao, Dissertation title: Markov chain Monte Carlo algorithms and posterior propriety for Bayesian generalized linear mixed models, graduated summer 2021, Current position: Visiting assistant professor, UMass Amherst

Anand Dixit, Dissertation title: Developments in MCMC diagnostics and sparse Bayesian learning models, graduated fall 2018, Current position: Visiting Assistant Professor, Purdue University

Xin Wang (with Z. Zhu), Dissertation title: Topics in generalized linear mixed models and spatial subgroup analysis, graduated spring 2018, Current position: Assistant Professor, San Diego State University

Dooti Roy (with D. K. Dey), Dissertation title: Univariate and multivariate survival models with flexible hazard functions, graduated spring 2017, Current position: Principal Methodology Statistician, Boehringer Ingelheim

### MS Students

Aaron Baker, CC title: Comparison of ASIS, sandwich, sufficient and ancillary MCMC algorithms for the probit and robit Models, graduated spring 2017

Anand Dixit, CC title: Assessing Convergence of MCMC chains using Kullback Leibler divergence and smoothing methods, graduated Spring, 2016

Jason Saporta, CC title: A comparison of the efficiencies of Gibbs samplers for two parameterizations of the random effects model, graduated Fall, 2014

Fangfang Liu, CC title: Analysis of survival data with a cure fraction under generalized extreme value distribution, graduated spring, 2012

**Undergraduates mentored**

Ryan Nagao, undergraduate research, current

Fanyi Meng, independent study, summer, 2014

## Member of Program of Study (Thesis) Committees

- 28 PhD Statistics (26 completed)
- 6 PhD Non-Statistics (6 completed)
- 7 MS Statistics (7 completed)
- 7 MS Non-Statistics (7 completed)

## Awards and Scholarships

Elected member of the International Statistical Institute, 2017

LAS Early Achievement in Research Award, Iowa State University, 2017

Best Posters Award, MCMSki3, Park City, Utah, January, 2011

M. Clinton Miller, III Outstanding Poster Award, Summer Research Conference on Statistics, Richmond, Virginia, Southern Regional Council on Statistics and the American Statistical Association, 2007

First prize in the Best Student Paper Competition, Annual Meeting of Florida Chapter of the American Statistical Association, Pensacola, Florida, Florida Chapter of the American Statistical Association, 2007

The William Mendenhall Award for outstanding first-year graduate student for the 2003-04 academic year, Department of Statistics, University of Florida

GlaxoSmithKline Scholar Award, Department of Statistics, University of Florida, 2003-2004

Certificate of Outstanding Achievement, University of Florida, 2003-2007

Alumni Fellowship, University of Florida, 2003- 2007

Award for excellent performance, Indian Statistical Institute, India, 2002

Merit Scholarship, Government of West Bengal, India, 1997-2001

National Scholarship, Government of India, 1993-1996

## Professional Society Memberships

American Statistical Association, since 2007

Institute of Mathematical Statistics, since 2004

International Indian Statistical Association, Life Member

International Society for Bayesian Analysis, since 2011